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THE GENESIS OF THE CATEGORIES

I

PRAGMATISTS have always contended that the categories, the general and basic principles of thought in terms of which all our experience is organized, such as space, time, thing, person, number, identity, contradiction, substance, causation, and truth, are at bottom instrumental and functional. They have come into existence, persisted, and come to dominate all our thought and to appear as self-evident principles simply because they have been so eminently successful in organizing human experience and making possible the carrying-out of human purposes and solution of human problems that it now seems impossible that man ever could or would dispense with them.[1] While, however, pragmatists have always thought of the categories as instrumental and functional in the biological, and more particularly the psychological sense, they have hitherto been forced to describe them schematically in the terminology of formal logic as "postulates" or "hypotheses," expressions never intended to be taken literally, and merely employed in default of knowledge of the historical details of their actual psychological development.[2]

Recent developments in psychology and sociology have now rendered it possible to trace some of the main features of the psychological evolution of the categories from a pragmatistic standpoint. In outlining these, the writer can hardly hope that all of what he has to say will accord with all of the divergent opinions of individual pragmatists, but he trusts that it will indicate a general method of treatment of this problem that will meet with their approval. In

[1] This common pragmatistic doctrine is found in James's "Pragmatism" and "Meaning of Truth," and, though less explicitly, it appears in connection with the discussion of hypothesis in Dewey's "Studies in Logical Theory" and "Influence of Darwinism on Philosophy." Dr. F. C. S. Schiller, however, deserves the credit for developing this side of pragmatism most fully, in "Axioms as Postulates" (an article in a volume of essays edited by Start and entitled "Personal Idealism"), and in his recent "Formal Logic."

[2] Schiller, "Axioms as Postulates," pages 122–124.

avoiding polemic, he does not wish to convey the impression that he regards pragmatism as an established doctrine, but rather that constructive exposition is probably at the present time the better way of winning converts to the pragmatistic faith.

It is now safe to say that before *Pithecanthropus alalus* evolved into primitive man by learning to speak and to think, and by devising categories to assist him in the process, he already possessed anticipations of some of our categories in the organizations of his sense percepts. Many animals discriminate accurately and precisely the positions of different objects, and find their way home over long distances of space and during considerable time intervals. As no one would credit animals with the possession of the categories of thought, this capacity must be attributed to the nature of their sense percepts and coordinated motor responses. We must also credit to animal perception the capacity to discriminate between animate and inanimate objects, since they manifest a mechanical mode of behavior toward the latter which is in sharp contrast with the anthropopathic behavior exercised toward other animals and toward human beings.[3] In a certain sense, therefore, the distinctions involved in some, at least, of the categories, *viz.*, space, time, thing, and person, are present in the sense percepts of animals. It is reasonable to suppose that if it were possible to eliminate the thought elements that are fused with immediate sense perception in human adult experience that we should find similar qualities or relations or elements or functions—call them what you will—in the pure percepts of human beings. However this may be, it is clear that historically and phylogenetically perceptual elements anticipatory of some of the categories existed prior to the genesis of thought.

What is the functional significance of these perceptual elements from the point of view of pragmatism? It is clear that their pragmatic significance is different from that of the categories. Though instrumental, they are so in a different sense. These perceptual elements have persisted because they are functional in a strictly biological sense. Due originally to spontaneous or Mendelian variations or what you will, the individuals whose behavior was perceptually organized in terms of them were better equipped in the struggle for life, and so survived as a result of natural, or perhaps of organic, selection. The perception of things or objects is functional in a second sense, also. What, for the same animal, would be one object upon one occasion might be several objects upon another occasion. For instance, a bunch of grapes might be perceived as a single object by a hungry monkey if he could grasp them all at once, whereas they would be separate objects if he could only pluck them one by one through the bars of his cage. What will be perceived as a thing or object, therefore, varies according to the practical demands of a situation.

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[3] J. H. Leuba, "A Psychological Study of Religion," New York: 1912. Chap. III., and the literature therein cited.

These perceptual anticipations as they exist in animals differ from the categories of human thought in two very important respects. In the first place, while the animal can pass successively from one place to another in the direction of home, guided by successive sense stimulations, and in this sense the space of its past experience is organized for it into a system, this system is probably never present before its imagination in ideas subject to its control, so that it can pass freely from one image or idea to another.[4] Still less, in the second place, can it communicate or cooperate with others, except to the extent that they are likewise stimulated by successive sense stimuli evoking similar reactions. Animals do not form societies in the human sense.

Men, then, notably differ from animals in the possession of free images and ideas and in the capacity for social life. When primitive men first came into possession of free images and ideas, and, as gregarious animals, felt the impulse to use these images and ideas to serve the purposes of their social life, they were confronted by the problem that provoked the formation of categories.

The most convenient example for us to consider first is the category of space. Newly possessed of free images and ideas, primitive men were conscious, not only of the objects of immediate sense perception at a given moment, but also of images of all sorts of other objects which they had perceived before, or only dreamed of or otherwise imagined, but which had spatial characteristics like perceived objects. Hence, some method of control of these images, so that they might be consciously thought of in relation to objects immediately perceived, became necessary. Moreover, this method of control must be some common standard or medium, the same for every one in the tribe, so that all could understand one another and cooperate for common purposes. The most available cognitive material which they had was utilized for the purpose, and, in the case of various native races reported to us, this was the tribal camp. If the camp consisted of four divisions, each allotted to a clan or phratry, the rest of space was divided into four grand divisions, each beginning with the space occupied by one of the clans and extended outward indefinitely, and associated in some sense with the clan totem.[5] The Zuñi Indians have a very elaborate conceptual space divided into seven divisions corresponding to the original seven clans of their pueblo.[6] When the tribal camp is circular in form, as among the Zuñis, the whole of space is an immense circle. The original significance of the Latin *mundus* and the Greek κοσμος seems to have been similar in principle.[7]

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[4] At least beyond a very limited extent. Cf. S. J. Holmes, "The Evolution of Animal Intelligence," Chaps. XII. and XIII.; M. F. Washburn, "The Animal Mind," Chaps. XI. and XII.

The differentiation of numbers above three or four is preceded by the use of concrete objects and portions of the body in calculations, a fact indicating that numbers are devices invented after men already knew how to calculate in order to facilitate the process.[8] Both localities and numbers begin by being discrete, each with its own sacred and magical attributes, and space and numbers only become abstract and homogeneous media of thought with later evolution. So we may claim that the evolution of these categories has gone on strictly in accordance with pragmatic principles. As situations and emergencies arose out of the conditions of social life, the categories were revised and further differentiated in order more effectively to solve social problems and realize social ends. Their thoroughly functional and instrumental nature is evident.

The social and instrumental origin of the categories explains why the evolution of some of them was retarded in a manner that would otherwise be unaccountable. Animals consistently distinguish between animate and inanimate objects in their perception, and adopt different modes of behavior accordingly. Why was primitive man unable to maintain this distinction in his sense perception, and to extend it to his free images and ideas, and organize his categories to that end? The problem of utilizing memory images of objects in their absence from perception would seem at once to have suggested comparison, and to have developed the laws of identity and contradiction. Such would doubtless have been the case had the evolution of the categories come directly from mechanical behavior, as we should logically suppose to have been the case. But, as a matter of fact, the evolution of the categories came rather illogically, following a devious route beginning with anthropopathic behavior. This was because primitive man's chief interest and attention was not so often directed towards inanimate as towards animate objects. The latter affected him in more different ways, and more intensely. Had interests involving mechanical behavior prompted man to attend chiefly to inanimate objects he would soon have learned to reckon upon the constant appearance of the same properties of objects under the same conditions, and to expect these to reappear to all other persons under the same conditions. Animate objects, however, do not reveal any such uniformities in so obvious a manner. There is not perfect uniformity in their behavior; their moods change, and some persons know things that others do not. So savages believe in metamorphoses, and in the existence of properties and objects that can be perceived only by certain persons, or by none at all.[9]

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[5] Durkheim and Mauss, "Année Sociologique," VI., page 47 ff.; E. Durkheim, "Les formes élémentaires de la vie religieuse" (Paris: Alcan. 1912), pages 15–17.

[6] F. H. Cushing, "Zuñi Creation Myths," in 13th Report of the Bureau of American Ethnology.

[7] F. M. Cornford, "From Religion to Philosophy," page 53.

[8] L. Lévy-Bruhl, "Les fonctions mentales dans les sociétés inférieures," Chap. V. Paris: Alcan. 1912.

This explains why many savages, if they possess them at all, do not employ the principles of identity, contradiction, and causation in a manner at all comparable with ourselves. Instead, they make very large use of another category which Professor Lévy-Bruhl calls "the law of participation"[10]—a kind of mystical category, partly cognitive, but partly affective, which it is difficult for us with our more differentiated and better controlled cognitive and affective states to understand. It is perhaps better to describe this law than to attempt to define it. Totemism furnishes illustrations of it. The Bororó of Brazil identify themselves with their totem, and see no difficulty in affirming that they are at the same time human beings and araras, a species of birds with red plumage. The *intichiuma* ceremonies of the Australian tribes reported by Spencer and Gillen imply a communion of essence in which the actual individual, the ancestral being which lives in him, and the animal or vegetable species which is his totem, participate. Whereas for our mentality these are necessarily three distinct realities, for the Australian the three are one only at the same time that they are three. The very word "to be" has a different meaning at this stage of culture from what it has for us.[11] For these savages it envelopes representations and the consciousness that experiences them in a kind of participation *felt* and *lived* rather than thought. It renders it possible for objects to be, in a manner hard for us to grasp, at the same time themselves and something other than themselves. The opposition between one and many, the same and the other, does not at this level impose the necessity of affirming one of these terms if one denies the other. At a higher level, after the felt unity of the tribe with the totem group has become less intense, and the principles of identity and contradiction more as we understand them, begin to emerge, we find tribes reported that are unable to believe that they can at one and the same time be men and totemic plants and animals.

[9] Lévy-Bruhl, *op. cit.*, pages 40–45; 58–67.

[10] *Idem.*, Chap. II., and *passim.*

[11] *Idem.*, page 94.

For them the totemic emblem has become symbolic rather than literal and some sort of intermediaries must effect the union. The participation, in other words, is *represented,* and no longer immediately felt. When the Bororó reach this stage, Lévy-Bruhl predicts that they will no longer say that they are araras, but that their ancestors were such, that they are of the same essence with the araras, that they will become araras after their death, etc.[12]

The functional nature of the categories is evident in this. At the lowest level, savages employ the category of participation because it meets the needs that they consciously feel, and is serviceable in satisfying them. The individual is hardly conscious of his individuality as such, but he very vividly feels his unity with his clan and totem, and the law of participation expresses his feeling vividly and completely; it "works" in the pragmatic sense. At higher levels, where use is made of representative imagery, instead of mystical feeling to express the unity of the tribe with its totem, the explanation probably is that individualism is beginning to emerge. In many relations of life individuals have now become conscious of their separate interests, while in other relations they still feel the need of vivid appreciation of their tribal and totemic unity. Representative imagery and the higher level of analytic and synthetic thinking that accompanies it can distinguish between, and at the same time conserve, diverse values that immediate feeling could only fuse and confuse. So that in changed conditions, in response to changed demands, new thought categories, like identity and contradiction, "work" better because they can organize representations, and, therefore, supplant the felt category of participation.

The social and pragmatic origin of the category of cause and effect is equally evident. At the lowest level this category is so undifferentiated that it is impossible to identify antecedent and consequent and lines of necessary connection with any certainty. A chief in the Torres Straits could not understand why, one day, he was unsuccessful in fishing. Three or four days afterward an infant and two women in the village died. In his mind this explained the matter fully, and cleared him of all blame. As Lévy-Bruhl points out, it would be impossible in this case to say which was cause and which effect, since the unsuccessful fishing was explained by the deaths, and so you might say was the effect of them, while on the other hand it preceded them as if it were cause.[13] All kinds of metamorphosis and action at a distance are believed in. Men can be born of rocks, stones can speak, the dead can become alive.[14] At this level we have to do with a felt or confused force, sometimes called by name, *mana, wakonda, orenda,* indicating a stage in which the category of causation has not yet become clearly differentiated from the law of participation.[15] Professor Durkheim maintains that this felt and at the same time impersonal force must be the collective force of society projected into physical objects,—or, as I think we might put it, it is anthropopathic behavior attributed to physical objects. His argument is as follows. (1) Such an idea of force could only come from felt inner experience, since the only forces that we can experience are those that we feel inwardly. The senses only reveal phenomena that succeed or follow one another, not force passing from one phenomenon to another. (2) This felt inward force can not be the individual's feeling of his own volition, for that would not seem to him to be an impersonal force. It therefore must be the feeling of social force or pressure, which would seem to the individual to be impersonal, since it is not due to any one in particular. When the category of cause and effect finally became differentiated, antecedent and consequent became discriminated, together with force and some sort of necessary connection. The last was the authority of society over the individual. When we think how the individual in the lower races is dominated by tribal customs at every hand, customs handed down from time immemorial for which nobody is responsible, we realize that the notions of force and necessary connection could arise in this way, and make possible the notion of causation.

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[12] *Idem.,* page 431.

[13] *Op. cit.,* pages 333 ff.

[14] *Idem.,* pages 518–528.

We may, therefore, claim that the evolution of cause and effect has been what the pragmatist would expect,—a gradual development, prompted by human needs and purposes, of devices for the explanation and control of the outer world. When the race was young it devised tools from the vague feelings that constituted most of its inner experience, and invented the category of participation, which satisfied its desires for the time; when it had become more individualistic and discriminated better its representative images, it learned to distinguish antecedent and consequent and connected the two by the only impersonal tie of relationship that it knew, and this "worked" for a long time, and still "works" for ordinary men to-day. Finally, as a feature of the exact methods of modern natural science, highly abstract quantitative conceptions have supplanted the anthropomorphic notion of a causal force or efficacy, because the former furnish simpler and more effective tools for solving scientific problems. Nothing could be more thoroughly pragmatic than this evolution.

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[15] Cf. also Irving King, "The Development of Religion," Chap. VI., and R. R. Marett, "The Threshold of Religion," Chap. IV., and *passim.*

Space does not admit the discussion of other categories, such as time, substance and attribute, genus and species, which Professor Durkheim and his school have analyzed along similar lines. Enough has been said to show their general implications. It should be noted that in the use that I have made of their investigations in outlining the character of the psychological genesis of the categories from the point of view of pragmatism, I have carefully avoided making the account in any way dependent upon certain of the more controverted positions of these writers, like the doctrine of collective representations, Lévy-Bruhl's theory of a pre-logical mentality fundamentally different from our own, and Durkheim's theory that the categories are of religious origin. I have also avoided every implication of the doctrine of a social mind or consciousness existing in any sense independent of individual minds as a separate entity. Whatever may be the fate of such doctrines, the evidence that the categories have had a social origin, and that they have varied greatly in different societies and different stages of culture, seems incontrovertible. That the categories should be interpreted therefore from the pragmatistic standpoint as instrumental and functional in their nature, serving to control and govern human experience and accomplish human purposes, seems almost a corollary.

II

It is now necessary to consider the category of truth. For, from the point of view of pragmatism, truth must also be regarded as a category. It is a schema or concept by means of which we organize our perceptual and imaginal experience in order to accomplish our ends. Its genesis can be outlined in a manner similar to the categories already discussed. Like causation, and unlike space and time, the distinction between truth and error is a purely thought distinction, not anticipated in sense perception. To be sure, animals sometimes experience perceptual illusions, but the distinction between truth and error implies some sort of norm or standard that could only have occurred to man after he was able to form judgments and make comparisons. When he was puzzled whether he could safely act upon a memory image, and decided whether or not to do so, he was consciously facing the problem of truth and error.[16] If the image led him to the results he desired, satisfied him, it was true; if it did not, it was false. *Any* sort of satisfaction following the acceptance of an idea probably made it true in the beginning.[17]

[16] Before the problem became so explicit as this, the formation of meanings must have begun in the manner described by Professor G. H. Mead, *Psychological Bulletin,* Vol. VII., pages 397–405.

[17] Perhaps savages who reply to a traveler's inquiry with the answer that

Very soon, however, man must as a rule in various fields of his conduct have learned to become more particular as to the kind of fulfillment an idea ought to have in order to be satisfactory. The physical environment is somewhat stiff and unyielding. Social requirements also bear heavily upon savages. The satisfaction requisite must soon have been referred to a social standard, and this must have included the other categories in the form that primitive men then possessed them. An idea to be true upon this second plane had to be verified by realizing its own intention and implications. Only on the first and lower plane can it be strictly said that "truth happens to an idea." On the higher plane the relation between an idea and its fulfillment must be more close and intimate.[18]

While truth, as it has been said, makes its appearance only with reflective thought, it has rather a definite instinctive foundation, more so than any of the other categories that we have considered. This is chiefly found in the instinct of curiosity and its accompanying emotion of wonder, which are prominent in the animals nearest to man.[19] They delight in watching whatever is strange and novel in their perceptual experience, when not restrained by some conflicting instinct, like fear. Primitive man's curosity, no doubt, was also evoked by whatever was strange and novel in the free play of his newly acquired free images and ideas; to him, as to us, reverie must have been a source of delight, and reverie I take to be the manifestation of curiosity with reference to the free play of images and ideas.[20] To employ the categories in the organization of novel perceptual and imaginal material, to work out *liaisons* and participations between things, to compare one idea with another and find points of identity and contrast, to devise causal explanations of things (at first no doubt as myths)—all such manipulation of images and ideas in terms of the categories must have been a delightful sport.

To be sure, most thinking done by individuals was and is

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they think will please him, regardless of the facts, imagine, for the time being, that they are telling him the truth! The honest but over-enthusiastic salesman and the passionate but fickle lover are analogous cases.

[18] Professor Dewey's test of truth seems to me to be that of the second plane, while James's looser use of the pragmatic method corresponds to the more primitive plane. This latter has always survived to some extent, especially in the field of religion, where beliefs that would have been erroneous if tested by the standards of the higher plane have often survived, and in a sense "worked" by performing some social service. (Cf. Dewey, "What Does Pragmatism Mean by Practical?" this JOURNAL, Vol. V., pages 85–99).

[19] W. McDougall, "Social Psychology," pages 57–59; "Body and Mind," page 266.

[20] Professor Graham Wallas has convinced me of the very great importance of reverie in this connection, but it seems to me to be a mode of curiosity, and not a separate instinct or innate disposition.

prompted by other instincts than curiosity. All human instincts and sentiments on occasion demand the acquisition of knowledge (*i. e.,* the organization of percepts and images into an intellectual system by means of the categories). Very often curiosity is only the servant or auxiliary of other instincts, and, being evoked only to aid in their gratification, is easily satisfied with whatever thought material satisfies them. Such other instincts we call "practical" or "interested," in contrast with curiosity which is "disinterested." Probably there is no field of scientific knowledge or speculative thought in which the organization of images and ideas has not gone beyond the satisfaction of "practical" interests. Such truth, like all other, is instrumental and functional,—satisfying, as it does, human instinct. It is teleological in the sense that the instinct that prompts man to desire it is for his own good, and makes for his own survival; but the man devoted to research is often as unconscious of this fact as he is of the teleology of the sex instinct when he falls in love. It is "disinterested" only in the somewhat Hibernian sense that it does not subserve "practical" interests.

Since, like the other categories, truth is a social creation, it is probably safe to say that most of the content of ideas organized by modern social groups under the category of truth owes its origin to the "disinterested" instinct of curiosity. Beliefs whose origin is more "interested" as a rule are not trustworthy and do not long survive. They either bump up against stubborn perceptual facts, or they twist the categories so badly out of shape (by straining the laws of identity, contradiction, causation, etc.), that it costs too much to maintain them. So that while the thinking of most individuals at any given moment is prompted by other motives than "disinterested" curiosity, the content of the judgments that they utilize in their thinking is for the most part drawn from the storehouse of the accepted truths of their social group, and this storehouse is chiefly stocked with truths that in the first instance were the fruit of "disinterested" curiosity.

The impulse to seek the gratification of curiosity in isolation from other impulses has become fortified by a certain moral sanction. Man has learned that the sort of cognitive material that satisfies the instinct of curiosity independently can be relied on, as a rule, in the long run to satisfy other interests and impulses most completely and most socially. He therefore sometimes hypostasizes this kind of truth as "disinterested truth," "absolute truth," and "truth for its own sake." Wisdom, the mental habit or sentiment that prompts some men to seek such satisfaction along definite lines and makes them efficient in so doing, early in moral evolution became a socially recognized virtue.[21]

The fact that truth is a social creation[22] explains various of its features. It explains why it is seemingly universal, objective, necessary, and sometimes sacred in character. It appears to the individual to be universal because it is a social possession, not his private property and not different for him from what it is for the other members of his group. It is no respecter of persons. It is objective to him for much the same reason. He has not made it; and only to a slight extent can even the greatest scientist hope to change it. It is necessary because it has all the authority of the group behind it, and the individual must submit to it, for society will tolerate no one that disregards many of its truths. Another reason why it is necessary is because most of the beliefs thought by individuals to be true have been half unconsciously assimilated by them through imitation and suggestion; and, to those who have never considered the reasons why they were incorporated into the social body of truth, they seem self-evident because no one has ever questioned them. They are often sacred, because they are assimilated under religious, patriotic, and other associations that involve deep emotional feeling and sentiment. How many Americans to-day in ordinary ranks of life know why they believe in monogamy and a republican form of government! To how many do these beliefs seem necessary and sacred truths about which it would be distasteful to argue in cold blood! Yet each of these truths is limited in its acceptance to certain social groups of a national character.

Truth to-day is of many kinds. As we have seen, it may or it may not be the satisfaction of a specific instinct or group of instincts.[23] There are truths and truths. In a broad way, a truth may be defined as any cognitive material that is affectively satisfying to a social group so that it may be employed as an instrument to action. Where the affective pull of "interested" impulses is strong, any cognitive material is liable to be satisfactory in this sense if it is agreeable to these impulses, and does not obviously resist organization under the categories or patently contradict sense perception. Such a social group as the Christian Scientists appears to be able to maintain beliefs that render them impermeable to a good deal of conflicting sense experience, and that probably come under the hoary law of participation, since they are irreconcilable with later categories. Such instances lie at one pole. At the opposite pole are the accepted principles of the more exact natural sciences, which have been clearly thought out in terms of the categories in their latest and most highly evolved forms, and have been thoroughly subjected to numerous perceptual and experimental tests. All of the accepted truths of modern society lie at one or the other of these poles or somewhere between. An adequate definition of truth must recognize these varying types. We can only deny the name truth to any accepted belief that satisfies a considerable social group by referring the belief to the standards of some other social group which we regard as superior. We may choose to reject the beliefs of the Christian Scientists because they conflict with natural science. In this case we identify ourselves with the natural scientists, choose to think in terms of their categories, and in consequence find the doctrines of Christian Science untrue. Truth, therefore, in the last analysis is what is thought to "work" because it satisfies the requirements of the highest social group to which we can appeal.

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[21] I have discussed the psychology of this and other virtues very summarily in an article in the *Philosophical Review*, July, 1913.

[22] The evidence that all the objects of thought, physical as well as mental, are social in their origin may be cited in the support of the view that truth is a social creation. Cf. George H. Mead, *op. cit.*, and E. S. Ames, "Social Consciousness and Its Object," *Psychological Bulletin*, Vol. VIII., pages 407–411.

[23] For a different view on this point, cf. Professor A. W. Moore, "Truth Value," in this JOURNAL, Vol. V., pages 429–436.

The categories, including under this term truth, have been treated as functional devices arising in human experience and aiding human societies to gain control of situations in which they find themselves so as to secure their ends. Is this not subjectivism?

It may be replied that if this conception deserves the name subjectivism, it is at least not individual, but social subjectivism. It is not solipsism, unless the Leviathan is the solipsist! The categories, as we have seen, are not the constructions of individuals. They are the accepted fundamental conceptions of an age, and only very gradually change from one age to another. They are the most permanent elements in human thought, and come to the individual with much of the universality and necessity that Kant attributed to them. It may therefore be said that the categories are real, if anything human is real. By means of them the members of human societies are able to adjust themselves to one another and to their physical environment, and to realize their purposes. They are real because they are effective instruments to action. This does not merely mean, as it seems to me, that they are real because they are postulates so valued by human beings that the latter would maintain their belief in them at whatever empirical cost, although it includes this. It further means that our experience has taught us that we may positively affirm that the universe, whatever its nature may be apart from us, is such that when human organisms come into experiential relations with it, their percepts and categories are fairly efficient in enabling them to effect an adjustment with it. It would be too bold, however, to maintain, except as a postulate of faith (similar in principle to those of religion, though, perhaps, on the whole more consistently workable) that the categories in any constitutive or representative fashion interpret the universe as it exists apart from its interaction with human organisms. Surely the social subjectivism, if such it be, of this form of pragmatism deserves commendation for honestly confessing that there are limits to possible knowledge, and for not, like certain rival forms of contemporary philosophy, advancing specious arguments based on the impossibility of doubt, the ego-centric predicament, and the like, and claiming that our human categories are laws of things in themselves.

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DISCUSSION

THE LAW OF THE RESTING POINT

IN a recent paper[1] Dr. Hollingworth has advanced a most interesting principle of normal perception which he calls the law of the resting point. The facts he adduces in favor of this principle seem to me to be, in the main, both accurate and significant. Their bearing upon the theory of perceptive processes is less obvious than their relation to the technique of the pictorial arts; but that they do throw light upon the former, I can not but believe.

I am inclined to conjecture, though, that they do not throw the particular illumination which Dr. Hollingworth turns on. And I wish here to discuss his interpretation of his data because I believe that it supplies us with an exceedingly sharp contrast between two radically different modes of psychological explanation. The mode chosen by Dr. Hollingworth enjoys almost universal popularity to-day among psychologists; the other mode is utterly discredited. Now, I should like to make clear that, in the present instance at least, all the advantages lie with this second despised mode.

The two modes may be briefly described as follows. The accepted and orthodox one explains a process in terms of its machinery, whereas the other one explains a process primarily in terms of the situation with which the machinery has to deal. In other words, the first mode presupposes that a process is what it is because of the build of its engine; while the second mode presupposes that there is an engine which owes its character, at least in large measure, to the character of the stuff and complication which the engine encounters. Please note that both modes rest upon presuppositions. And please

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[1] "A New Experiment in the Psychology of Perception," this JOURNAL, Vol. X., page 505.